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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,493	11/03/2003	John R. Webster	84706 3038 KAW	3238

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EXAMINER	
KIM, TAE JUN	

ART UNIT	PAPER NUMBER
3746	

DATE MAILED: 03/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/698,493	WEBSTER ET AL.	
	Examiner	Art Unit	
	Ted Kim	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 December 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15,17-20 and 22-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15, 17-20, 22-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6, 10, 11, 13-15, 17-19, 22-24 are rejected under 35 U.S.C. 102(b) as being anticipated by GB 2207468. GB '468 teaches a system for exhausting gas via a nozzle (Fig. 6), comprising: a nozzle comprising a nozzle body portion defining a nozzle exit, characterised in that the nozzle body portion comprises fluid injection means 14, positioned upstream of the exit relative to a fluid flow created by the operation of the system, for injecting fluid upstream of the exit to disturb a boundary layer between the nozzle body portion and a fluid flow created by operation of the system; the nozzle body portion further defines a nozzle flow channel leading to the nozzle exit, wherein the fluid injection means is positioned for injecting fluid within the nozzle flow channel; the nozzle has an exterior surface and the fluid injection means is positioned for injecting fluid at the exterior surface of the nozzle upstream of the exit; the fluid injection means comprises one or more apertures 14 in the outer surface or surfaces of a nozzle body for providing one or more fluid jets; the apertures are positioned upstream of the exit; comprising means for providing the fluid jet means via the apertures during operation of the system; a cutoff valve is the means for altering the mass flow of the fluid jet means

(page 6, lines 7+); wherein the mass flow rate of the fluid jet means, when operational, is fixed; the fluid injection means creates microjets of fluid; wherein the nozzle body tapers to an edge at an exit; means for controlling the injection means to inject fluid during take-off of the aeroplane but not to inject fluid when cruising (the flow can inherently be controlled by the system to operation when near the airport, see also page 1, lines 2+ and cutoff when not needed page 3, lines 20-32); a system for exhausting gas via a nozzle , comprising: a nozzle comprising a nozzle body portion defining a nozzle exit, characterised in that the nozzle body portion comprises output means 14, positioned upstream of the exit relative to a fluid flow created by the operation of the system, which will inherently disturbing a boundary layer between the nozzle body portion and the fluid flow; the output means comprises fluid injection means 14 for injecting fluid upstream of the exit; wherein the fluid injection means comprises a plurality of apertures 14 for providing fluid microjets; comprising: a nozzle, the nozzle comprising a nozzle body portion comprising fluid injection means for injecting fluid characterised in that the system further comprises control means for controlling the fluid injection means to inject fluid during a first phase of operation and to not inject fluid during a second phase of operation; wherein the first phase is at least a part of the take-off phase of an aeroplane flight (which is the airport and thus noise reduction required); wherein the second phase is at least a part of the cruising phase of an aeroplane plane flight.

3. Claims 1-14, 17-20, 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Dorris, III et al (6,308,898). Dorris, III et al teach a system for exhausting gas via a

nozzle, comprising: a nozzle comprising a nozzle body portion 40 defining a nozzle exit P, characterised in that the nozzle body portion comprises fluid injection means 42, positioned upstream of the exit relative to a fluid flow created by the operation of the system, for injecting fluid upstream of the exit to disturb a boundary layer between the nozzle body portion and a fluid flow created by operation of the system; the nozzle body portion further defines a nozzle flow channel leading to the nozzle exit, wherein the fluid injection means is positioned for injecting fluid within the nozzle flow channel; the nozzle has an exterior surface and the fluid injection means is positioned for injecting fluid at the exterior surface of the nozzle upstream of the exit P; the fluid injection means comprises one or more apertures 42 in the outer surface or surfaces of a nozzle body for providing one or more fluid jets; the apertures are positioned upstream of the exit; comprising means for providing the fluid jet means via the apertures during operation of the system; means for altering the mass flow of the fluid jet means; wherein the mass flow rate of the fluid jet means, when operational, is fixed; comprising pulsing means for pulsing the fluid jet means; wherein the pulsing means pulses the fluid jet means at a selected frequency; the pulsing means (col. 6, lines 5+) are controllable to vary the frequency (col. 8, lines 23+) at which one or more fluid jets are pulsed; wherein the apertures have a fixed position and further comprising means for varying the position of fluid jets by providing fluid jets via selected apertures only (col. 8, lines 6+); the fluid injection means creates microjets of fluid; wherein the nozzle body tapers to an edge at an exit; a system for exhausting gas via a nozzle, comprising: a nozzle comprising a

nozzle body portion defining a nozzle exit, characterised in that the nozzle body portion comprises output means 42, positioned upstream of the exit relative to a fluid flow created by the operation of the system, which inherently disturb a boundary layer between the nozzle body portion and the fluid flow; the output means comprises fluid injection means for injecting fluid upstream of the exit; wherein the fluid injection means comprises a plurality of apertures for providing fluid microjets; comprising pulse means for pulsing the fluid microjets; a system for exhausting gas via a nozzle, comprising: a nozzle, the nozzle comprising a nozzle body portion comprising fluid injection means for injecting fluid characterised in that the system further comprises control means for controlling the fluid injection means to inject fluid during a first phase of operation and to not inject fluid during a second phase of operation.

4. Claims 1-3, 13, 14, 17-19, 22 are rejected under 35 U.S.C. 102(b) as being anticipated by GB 1,141,784. GB '784 teaches a system for exhausting gas via a nozzle, comprising: a nozzle comprising a nozzle body portion 11 defining a nozzle exit, characterised in that the nozzle body portion comprises fluid injection means 24, positioned upstream of the exit relative to a fluid flow created by the operation of the system, for injecting fluid upstream of the exit to disturb a boundary layer between the nozzle body portion and a fluid flow created by operation of the system; the nozzle body portion further defines a nozzle flow channel leading to the nozzle exit, wherein the fluid injection means is positioned for injecting fluid within the nozzle flow channel; the nozzle has an exterior surface and the fluid injection means is positioned for injecting

fluid at the exterior surface of the nozzle upstream of the exit; wherein the mass flow rate of the fluid jet means, when operational, is fixed; the fluid injection means creates microjets of fluid; wherein the nozzle body tapers to an edge at an exit; a system for exhausting gas via a nozzle, comprising: a nozzle comprising a nozzle body portion defining a nozzle exit, characterised in that the nozzle body portion comprises output means, positioned upstream of the exit relative to a fluid flow created by the operation of the system, for disturbing a boundary layer between the nozzle body portion and the fluid flow; the output means comprises fluid injection means for injecting fluid upstream of the exit or sound wave production means; wherein the fluid injection means comprises a plurality of apertures for providing fluid microjets; comprising pulse means for pulsing the fluid microjets; a system for exhausting gas via a nozzle, comprising: a nozzle, the nozzle comprising a nozzle body portion comprising fluid injection means for injecting fluid characterised in that the system further comprises control means for controlling the fluid injection means to inject fluid during a first phase of operation and to not inject fluid during a second phase of operation.

5. Claims 1-14, 17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Catt et al (6,112,513). Catt et al teach a system for exhausting gas via a nozzle 68, comprising: a nozzle comprising a nozzle body portion defining a nozzle exit, characterised in that the nozzle body portion comprises fluid injection means, positioned upstream of the exit relative to a fluid flow created by the operation of the system, for injecting fluid upstream of the exit to disturb a boundary layer between the nozzle body

portion and a fluid flow created by operation of the system; the nozzle body portion further defines a nozzle flow channel leading to the nozzle exit, wherein the fluid injection means 76 is positioned for injecting fluid within the nozzle flow channel; the nozzle has an exterior surface and the fluid injection means is positioned for injecting fluid at the exterior surface of the nozzle upstream of the exit; the fluid injection means comprises one or more apertures in the outer surface or surfaces of a nozzle body for providing one or more fluid jets; the apertures are positioned upstream of the exit; comprising means for providing the fluid jet means via the apertures during operation of the system; means for altering the mass flow of the fluid jet means; pulsing means (Fig. 1, col. 6, lines 14+) for pulsing the fluid jet means; wherein the pulsing means pulses the fluid jet means at a selected frequency; the pulsing means are controllable to vary the frequency at which one or more fluid jets are pulsed; wherein the mass flow rate of the fluid jet means, when operational, is fixed; the fluid injection means creates microjets of fluid; wherein the nozzle body tapers to an edge at an exit; a system for exhausting gas via a nozzle, comprising: a nozzle comprising a nozzle body portion defining a nozzle exit, characterised in that the nozzle body portion comprises output means, positioned upstream of the exit relative to a fluid flow created by the operation of the system, for disturbing a boundary layer between the nozzle body portion and the fluid flow; the output means comprises fluid injection means for injecting fluid upstream of the exit or sound wave production means; wherein the fluid injection means comprises a plurality of

apertures for providing fluid microjets; comprising pulse means (see Fig. 1) for pulsing the fluid microjets; a system for exhausting gas via a nozzle, comprising: a nozzle.

6. Claims 1-14, 17-20, 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Kranz et al (4,350,479). Kranz et al teach a system for exhausting gas via a nozzle, comprising: a nozzle comprising a nozzle body portion defining a nozzle exit, characterised in that the nozzle body portion comprises fluid injection means24, 26, 28, 30, positioned upstream of the exit relative to a fluid flow created by the operation of the system, for injecting fluid upstream of the exit to disturb a boundary layer between the nozzle body portion and a fluid flow created by operation of the system; the nozzle body portion further defines a nozzle flow channel leading to the nozzle exit, wherein the fluid injection means is positioned for injecting fluid within the nozzle flow channel; the nozzle has an exterior surface and the fluid injection means is positioned for injecting fluid at the exterior surface of the nozzle upstream of the exit; the fluid injection means comprises one or more apertures in the outer surface or surfaces of a nozzle body for providing one or more fluid jets; the apertures are positioned upstream of the exit; comprising means for providing the fluid jet means via the apertures during operation of the system; means for altering the mass flow of the fluid jet means 32; pulsing means for pulsing the fluid jet means; wherein the pulsing means pulses the fluid jet means at a selected frequency; the pulsing means are controllable to vary the frequency at which one or more fluid jets are pulsed; wherein the mass flow rate of the fluid jet means, when operational, is fixed; the fluid injection means creates microjets of fluid; wherein the

nozzle body tapers to an edge at an exit; a system for exhausting gas via a nozzle, comprising: a nozzle comprising a nozzle body portion defining a nozzle exit, characterised in that the nozzle body portion comprises output means, positioned upstream of the exit relative to a fluid flow created by the operation of the system, for disturbing a boundary layer between the nozzle body portion and the fluid flow; the output means comprises fluid injection means for injecting fluid upstream of the exit or sound wave production means; wherein the fluid injection means comprises a plurality of apertures for providing fluid microjets; comprising pulse means for pulsing the fluid microjets; a system for exhausting gas via a nozzle, comprising: a nozzle, the nozzle comprising a nozzle body portion comprising fluid injection means for injecting fluid characterised in that the system further comprises control means for controlling the fluid injection means to inject fluid during a first phase of operation and to not inject fluid during a second phase of operation (the fluid is not injected when thrust vectoring is not needed).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 15, 22-24 rejected under 35 U.S.C. 103(a) as being unpatentable over either Dorris, III et al (6,308,898) or GB 1,141,784 in view of GB 2207468. The above prior art teach a nozzle which has noise reduction and does not specifically address when the noise reduction is on. GB '468 teaches control means for controlling the fluid injection means to inject fluid during a first phase of operation and to not inject fluid during a second phase of operation; wherein the first phase is at least a part of the take-off phase of an aeroplane flight (which is the airport and thus noise reduction required); wherein the second phase is at least a part of the cruising phase of an aeroplane plane flight (where the airplane may be beyond appreciable hearing limits and/or in uninhabited spaces such that noise reduction is not needed). Hence, it would have been obvious to one of ordinary skill in the art to employ noise reduction during take-off, as being close to the airport and thus objectionable and to turn off the noise reduction during cruise, i.e. when it is not needed.

9. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 2207468 as applied above, and further in view of Dorris, III et al (6,308,898). GB '468 does not teach pulsing the fluid injection. Dorris, III et al teach the pulsing means pulses the fluid jet means at a selected frequency; the pulsing means (col. 6, lines 5+) are controllable to vary the frequency (col. 8, lines 23+) at which one or more fluid jets are pulsed; wherein the apertures have a fixed position and further comprising means for varying the position of fluid jets by providing fluid jets via selected apertures only (col. 8,

lines 6+) for enhanced noise reduction. It would have been obvious to one of ordinary skill in the art to pulse the fluid injection in order to enhance the noise reduction.

Response to Arguments

10. Applicant's arguments filed 12/22/2005 have been fully considered but they are not persuasive. First, the function of disturbing the boundary layer is functional language and the claimed references clearly teach all the structure of the claims and each of the structures is capable of disturbing the boundary layer. Even, if given weight each of the applied claimed references or combinations thereof will perform that function either explicitly or inherently as each of them injects fluid flow which will disturb the boundary layer that is present at that position. In the case of inherency, the burden is on the applicant to rebut a finding of inherency. MPEP 2112.

V. ONCE A REFERENCE TEACHING PRODUCT APPEARING TO BE SUBSTANTIALLY IDENTICAL IS MADE THE BASIS OF A REJECTION, AND THE EXAMINER PRESENTS EVIDENCE OR REASONING TENDING TO SHOW INHERENCY, THE BURDEN SHIFTS TO THE APPLICANT TO SHOW AN UNOBVIOUS DIFFERENCE

"[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on inherency' under 35 U.S.C. 102, on *prima facie* obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." The burden of proof is similar to that required with respect to product-by-process claims. *In re Fitzgerald,* 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting *In re Best,* 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)).

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Ted Kim whose telephone number is 571-272-4829. The Examiner can be reached on regular business hours before 5:00 pm, Monday to Thursday and every other Friday.

The fax numbers for the organization where this application is assigned are 571-273-8300 for Regular faxes and 571-273-8300 for After Final faxes.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Thorpe, can be reached at 571-272-4444.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist of Technology Center 3700, whose telephone number is 703-308-0861. General inquiries can also be directed to the Patents Assistance

Center whose telephone number is 800-786-9199. Furthermore, a variety of online resources are available at http://www.uspto.gov/main/patents.htm

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